

According to yet another aspect of the present invention, a cover 360 is provided on the container 322 over the container corner wall as shown in FIG. 19. The cover has the configuration of a hollow-triangular prism. The cover 360 is releasably attached to the container 322 so that it can be removed by the user to expose the dispensing structure spout 348. In one presently contemplated preferred embodiment, the cover is defined by integral extensions of the material which forms the top wall 332, the end wall 328, and the two sidewalls 324 and 326. The cover 360 defines a hermetically sealed volume around the spout 348 projecting beyond the corner wall 334. In an alternate design (not illustrated) the cover 360 could be a separate component secured to the container 322.

A releasable attachment means is provided in the form of a weakened frangible region 364 along the edges of the cover 360 adjacent the planar corner wall 334 underneath the cover 360. The weakened frangible regions 364 may include a score or groove partially through the material or a plurality of spaced-apart, partial perforations in the material. Other suitable, weakened structures or rupturable structures may be provided for enabling the user to readily remove the cover 360.

FIG. 20 shows another embodiment of a dispensing structure 420 of the present invention which may be mounted to a container 322 which is identical with the container 322 described above with reference to FIGS. 17-18.

With reference to FIG. 20, the dispensing structure is a multi-piece fitment comprising a base 430 and a valve carrier 440 which are adapted to be assembled together. Prior to assembly, the base 430 is mounted in the opening 340 of the container 322 (FIG. 22). Subsequently, the valve carrier 440 is mounted to the end of the base 430. The base 430 has a flange 442 adapted to be sealingly bonded to the container planar wall or wall portion 334 as shown in FIG. 22. The flange is especially suitable for being sealingly bonded with a seal 446 to the container corner wall 334. The seal or bond may be an adhesive bond or a heat seal. The heat seal may be effected by conventional or special processes employing heat induction, ultrasonic welding, friction welding, and the like. In some applications, it may be desirable to provide a mechanical engagement or interference attachment that has a leak-tight construction.

The base 430 includes a hollow projection 450 (FIGS. 20 and 21) extending from the flange 442. The hollow projection 450 defines at least a portion of a dispensing passage 454 (FIG. 22) for establishing communication between the exterior and interior of the container. The exterior of the hollow projection 450 defines an external thread 460. The upper end of the hollow projection 450 preferably defines an outer annular end which is adapted to receive a membrane, release paper, or foil 464. The membrane 464 is releasably secured across the outer annular end of the hollow projection 450 to sealingly occlude the portion of the dispensing passage 454 defined by the hollow projection 450.

The valve carrier 440 includes a skirt 470 (FIGS. 20 and 22). The skirt 470 has an internal female thread 472 for threadingly engaging the external thread 460 on the base hollow projection 450. The valve carrier 440 has a unitary spout 478 extending from the skirt 470. The spout 478 has an interior configuration substantially identical with the interior configuration of the fitment spout 52 described above with reference to FIG. 15. The interior of the spout 478 thus includes an annular valve seat (not visible in FIGS. 20-22, but identical with the valve seat 90 described above

with reference to FIG. 15). A flexible valve (identical with the valve 180 described above with reference to FIG. 15) is mounted to the valve seat within the spout 478 and is held therein by means of a retaining ring (identical with the retaining ring 276 described above with reference to FIG. 15). The valve within the spout 478 is thus sealingly secured across the dispensing passage defined by the spout. Other suitable retention systems could be employed, including adhesive securement, thermal bonding, and the like.

The valve carrier 440, with the valve secured therein, is threadingly mounted to the fitment base projection 450 after the fitment base projection 450 has been installed in the wall of the container 322. Initially, the membrane or release foil 464 is left in place as a freshness seal and/or tamper indicator. Prior to completing the fabrication of the container 322, an interior volume of the container 322 is filled with product. Subsequently, the fabrication of the container 322 is completed by closing over portions of the container in a sealed closed relationship to form a complete package.

To use the package, the user initially unscrews the valve carrier 340 from the fitment hollow projection 450. The user then removes membrane 464 to open the dispensing passage 454. Finally, the valve carrier 440 is reinstalled on the fitment hollow projection 450. The container 322 can then be inverted to dispense product through the dispensing structure. One or more walls of the container 322 may be squeezed or deflected inwardly to force the liquid through the valve within the spout 478.

The dispensing structures and packages of the present invention permit a product to be dispensed by the user under controlled conditions. The amount of pressure exerted on the liquid product within the container can be controlled as necessary to effect the opening or closing of the valve within the dispensing structure.

The exposed surfaces of the package, including the dispensing structure, will remain cleaner during the use life of the package because the user can provide a more accurate product flow and because the user can more accurately control the direction of dispensing.

The dispensing structure of the present invention accommodates a package configuration that prevents air from re-entering the package, and this reduces the opportunity for contamination or for air-induced deterioration of the product within the package. Further, a membrane or liner sealingly secured across the discharge passage of the dispensing structure can be reused as a means for reclosing and sealing the package prior to handling or transporting the container.

In some applications, it may be desirable to provide an exterior lid for the fitment spout, either connected by a hinge or as a separate structure. However, the illustrated preferred forms of the system of the present invention are aesthetically pleasing, in part, because they have no lid which remains attached during dispensing and which could interfere with the dispensing of the product from the container. Additionally, because there is no exterior lid in the preferred embodiments, the user's view of the dispensing process is not obscured.

It will be readily observed from the foregoing detailed description of the invention and from the illustrations thereof that numerous other variations and modifications may be effected without departing from the true spirit and scope of the novel concepts or principles of this invention.

What is claimed is:

1. A package comprising:

a collapsible pouch defined by at least two, opposing, flexible web portions that are sealed together adjacent

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an interior region which is unsealed and that are separated at a peripheral region to define an opening to the interior region;

- a fitment defining a dispensing passage and having a hollow base that has two lateral ends and that defines two generally oppositely facing walls which converge and terminate at each of said two lateral ends, each said wall defining an exterior surface portion sealingly secured to one of said web portions along said opening, said fitment hollow base defining at least a portion of said dispensing passage through said fitment, said fitment including a spout that (A) extends from said hollow base, and (B) defines at least a portion of said dispensing passage;
  - a flexible valve that (A) is disposed within said hollow fitment across said fitment dispensing passage, and (B) has a self-sealing slit which opens to permit flow therethrough in response to increased pressure on the side of said valve facing the interior of said pouch; and
  - a removable and disposable cover formed as extensions of at least two of said pouch web portions which enclose said fitment spout and which have peripheral margins sealed together to define a hermetically sealed volume around said fitment spout.
2. The package in accordance with claim 1 in which said cover includes weakened, frangible regions along edges of said cover adjacent said pouch.
  3. The package in accordance with claim 1 in which said pouch web portions each has a generally rectangular configuration generally defining three right angle corners and one mitered corner; and said fitment is disposed in said opening at said mitered corner.
  4. The package in accordance with claim 1 in which said fitment spout has an outer annular end; and said dispensing structure further includes a membrane that is releasably secured across said outer annular end to sealingly occlude the portion of said dispensing passage defined by said spout.
  5. A package comprising:
    - a collapsible pouch defined by at least two, opposing, flexible web portions that are sealed together adjacent an interior region which is unsealed and that are separated at a peripheral region to define an opening to the interior region;

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- a fitment that (1) defines a dispensing passage, (2) is sealingly secured to said web portions along said opening, and (3) extends from said interior region through said opening;
  - a flexible valve that (A) is disposed within said fitment across said fitment dispensing passage, and (B) has a self-sealing slit which opens to permit flow therethrough in response to increased pressure on the side of said valve facing the interior of said pouch; and
  - a removable cover on said pouch enclosing said fitment to define a hermetically sealed volume around said fitment over said opening.
6. The package in accordance with claim 5 in which said cover is (1) disposable, (2) formed as extensions of at least two of said pouch web portions, and (3) includes weakened, frangible regions along edges of said cover adjacent said pouch.
  7. The package in accordance with claim 6 in which there are two of said pouch web portions;
    - each of said pouch web portions has a generally rectangular configuration generally defining three right angle corners and one mitered corner; and
    - said fitment is disposed in said opening at said mitered corner.
  8. The dispensing structure in accordance with claim 5 in which
    - said fitment includes a hollow base that defines at least a portion of said dispensing passage through said fitment;
    - said fitment hollow base has two lateral ends and defines two generally oppositely facing sidewalls which converge and terminate at each end of said two lateral ends, each said sidewall defines an exterior surface portion sealingly secured to one of said web portions along said opening;
    - said fitment includes a spout that (1) extends from said hollow base, and (2) defines a portion of said dispensing passage;
    - said fitment spout has an outer annular end; and
    - said dispensing package includes a membrane that is releasably secured across said outer annular end to sealingly occlude the portion of said dispensing passage defined by said spout.

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